IN THE CLAIMS

Listing of Claims

Claims 1-11 (Cancelled).

12. (Previously Presented) A CDMA transmission apparatus comprising:

a spreading code generator that generates a bth chip C(a,b) of an ath spreading code by a following equation,

$$C(a,b) = e^{j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code, n=a×b, a=0~N-1, and b=0~N-1; and

a spreader that spreads a transmission signal using the spreading code generated in the spreading code generator, wherein:

an inverse discrete Fourier transformer is used to constitute the spreading code generator and the spreader.

13. (Previously Presented) A CDMA transmission apparatus comprising:

a spreading code generator that generates a bth chip C(a,b) of an ath spreading code by a following equation,

$$C(a,b) = e^{j(2n\pi/N)}$$

where e is a base of natural logarithm, N is a length of the spreading code, n=a×b, a=0~N-1, and b=0~N-1; and

a spreader that spreads a transmission signal using the spreading code generated in the spreading code generator, wherein:

a plurality of cascaded inverse discrete Fourier transformers are used to constitute the spreading code generator and the spreader, and perform inverse discrete Fourier transform on the transmission signal hierarchically.

14. (Previously Presented) A CDMA reception apparatus comprising:

a spreading code generator that generates a bth chip $C(a,b)$ of an ath spreading code by a following equation,

$C*(a,b) = e^{-j(2n\pi/N)}$

where e is a base of natural logarithm, N is a length of the spreading code, $n=a \times b$, $a=0 \sim N-1$, and $b=0 \sim N-1$; and

a despreader that despreads a received signal using the spreading code generated in the spreading code generator, wherein:

a discrete Fourier transformer is used to constitute the spreading code generator and the despreader.

15. (Previously Presented) A CDMA reception apparatus comprising:

a spreading code generator that generates a bth chip $C(a,b)$ of an ath spreading code by a following equation,

$C*(a,b) = e^{-j(2n\pi/N)}$

where e is a base of natural logarithm, N is a length of the spreading code, n=a×b, a=0~N-1, and b=0~N-1; and

a despreader that despreads a received signal using the spreading code generated in the spreading code generator, wherein

a plurality of cascaded discrete Fourier transformers are used to constitute the spreading code generator and the spreader, and perform discrete Fourier transform on the received signal hierarchically.